

REMARKS

Claims 21, 5-9, 14-19, 23 and 24 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,943,892 to Tsuchiya et al.

Tsuchiya et al was cited as meeting each of the terms of the rejected claims, including a step of forming fine protrusions on dielectric layer 3 before energization, citing Figs. 1a and col. 5, lines 26-27.

Claims 10, 11, 12 and 13 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Tsuchiya et al in view of U.S. Patent 4,724,053 to Jasne. Jasne was cited as disclosing an organic semiconductor within the scope of claims 10-13.

Claim 25 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Tsuchiya et al in view of U.S. Patent No. 3,299,325 to Wagener et al. Wagener et al was cited as disclosing electrolytically forming fine protrusions on the dielectric layer, citing column 1, lines 38-45.

Claims 20, 5-9, 14-19 and 24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Tsuchiya et al. Although acknowledging that Tsuchiya et al fails to teach a feather-shaped protrusion and protrusions having a width of about 0.1 to about 120 nm, the Examiner considered that it would have been obvious to form such feather-shaped protrusions in the absence of evidence to the effect that shape is significant.

Claims 10, 11, 12 and 13 stand rejected under 35 U.S.C. § 103(a) as being obvious over Tsuchiya et al in view of Jasne.

Claim 25 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Tsuchiya et al in view of Wagener et al.

The grounds for rejection remain the same as set forth in the previous Office Action.

Applicant traverses, and respectfully requests the Examiner to reconsider in view of the Declaration evidence submitted herewith and the following remarks.

The independent claims are claims 20 and 21. The method of claim 20 comprises forming feather-shaped fine protrusions on the dielectric layer before energization having a width of about 0.1 to about 120 nm and a height of about 0.1 to about 600 nm. Further, the fine protrusions are not in the form of a layer. As claimed in claim 21, fine protrusions are formed on the dielectric layer before energization, the electric conductor having inner pores formed therein and a majority of the fine protrusions overlay the outer surface of the dielectric layer or overlay an outer surface of the dielectric layer and an inner pore surface of the electric conductor with 10 μ m from the outer surface. Further, the fine protrusions are not in the form of layer and have a width of 0.1 to 60 nm.

Turning to the cited prior art, Tsuchiya et al discloses immersing foil 1 on which anodized film 3 has been formed in an aqueous solution of a water-soluble manganese compound for a given time and drying in air at 200° to 300°C so as to form a manganese dioxide film 4 on the anodized film 3 (col. 5, lines 9-17). The manganese dioxide layer may be in the form of a continuous layer or as islands or spots. A conductive polymer film is then formed on the manganese dioxide film (col. 5, lines 26-29).

In the Remarks portion of the Amendment filed September 19, 2008, the present Applicant pointed out that in Tsuchiya et al, the size of the island or spot of the manganese dioxide film layer is expected to be large enough so as to allow for contact with an electrode and therefore enable polymerization. Consequently, the manganese layer as “islands or spots” would have a structure different from the nanometer-size fine protrusions of the present invention.

In the Response to Arguments at page 13 of the Office Action, the Examiner maintained that Tsuchiya et al meets the subject limitations of claims 20 and 21. Particularly, because the “islands or spots” in Tsuchiya are said to be formed by a method that is the same as that used in the present invention, the Examiner concluded that the islands or spots in Tsuchiya are not in the form of a layer (such that the limitations of claims 20 and 21 are satisfied).

The present Applicant respectfully disagrees with the Examiner’s reading and understanding of Tsuchiya et al. In this regard, Mr. Naito, the inventor of the present application, reproduced Example 1 of Tsuchiya et al to demonstrate that the resulting product does not meet one or more of the limitations of claims 20 and 21 as reported in the executed Declaration Under 37 C.F.R. § 1.132 submitted herewith.

In greater detail, based on the description of Example 1 of Tsuchiya et al, Mr. Naito subjected an aluminum etched foil to chemical formation in a 1% oxalic acid aqueous solution at 80°C and 4 V for ten hours. After chemical formation, the foil removed from the solution and dried was observed using a scanning electron microscope (Figs. 1 and 2 “after etching” as attached to the Declaration) in the same manner as in Example 1 of the specification.

Then, the etched foil on which an oxide film was formed was immersed in a 30% manganese nitrate aqueous solution at room temperature for five minutes. The foil was removed from the solution and left standing in air in a muffle furnace at 300°C for one hour. The foil removed from the furnace and cooled to room temperature was observed using a scanning electron microscope (Figs. 3 and 4 “after thermal decomposition”).

As seen from a comparison of Figs. 1 and 2 (after chemical formation) with Figs. 3 and 4 (after thermal decomposition), respectively, there is little difference therebetween, and fine protrusions of a nanometer scale were not formed.

As shown in the test results presented in the Rule 132 Declaration submitted herewith, the product of Tsuchiya et al does not have nanometer-sized fine protrusions as claimed in present claims 20 and 21, and therefore does not meet this characteristic feature of the invention. Further, none of Jasne and Wagener et al makes up for the deficiencies of Tsuchiya et al. Withdrawal of the foregoing rejections under 35 U.S.C. § 102(b) and 35 U.S.C. § 103(a) is respectfully requested.

Withdrawal of all rejections and allowance of claims 5-21 and 23-25 is earnestly solicited.

In the event that the Examiner believes that it may be helpful to advance the prosecution of this application, the Examiner is invited to contact the undersigned at the local Washington, D.C. telephone number indicated below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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